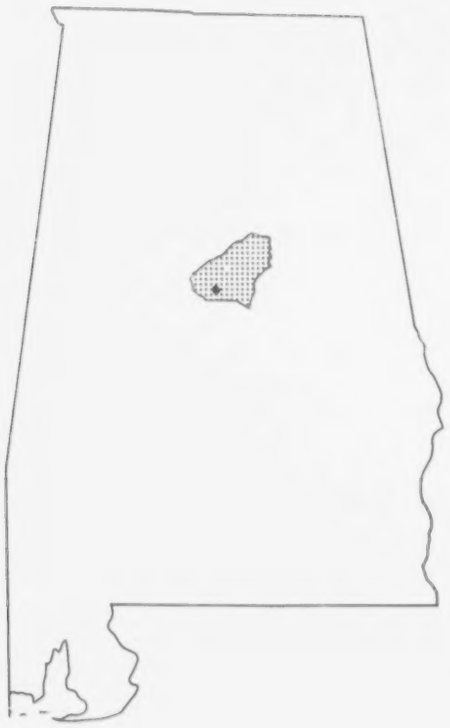
010349

# FLOOD INSURANCE STUDY

## CITY OF MONTEVALLO, ALABAMA
SHELBY COUNTY



SEPTEMBER 16, 1980

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PUBLISHED SEPARATELY:

Flood Insurance Rate Map

FLOOD INSURANCE STUDY
CITY OF MONTEVALLO, ALABAMA

# 1.0 INTRODUCTION

## 1.1 Purpose of Study

This Flood Insurance Study investigates the existence and severity of flood hazards in the City of Montevallo, Shelby County, Alabama, and aids in the administration of the National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973. This study will be used to convert the City of Montevallo to the regular program of flood insurance by the Federal Insurance Administration (FIA). Local and regional planners will use this study in their efforts to promote sound flood plain management.

In some states or communities, flood plain management criteria or regulations may exist that are more restrictive or comprehensive than those on which these Federally-supported studies are based. These criteria take precedence over the minimum Federal criteria for purposes of regulating development in the flood plain, as set forth in the Code of Federal Regulations at 24 CFR, 1910.1 (d). In such cases, however, it shall be understood that the state (or other jurisdictional agency) shall be able to explain these requirements and criteria.

## 1.2 Authority and Acknowledgments

The source of authority for this Flood Insurance Study is the National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973.

The hydrologic and hydraulic analyses for this study were performed by Law Engineering Testing Company for the Federal Insurance Administration, under Contract No. H-4636. This study was completed in November 1979.

## 1.3 Coordination

Streams requiring detailed study were identified at a meeting in March 1978 attended by representatives of the study contractor, FIA, and City of Montevallo.

Contract was maintained during the course of this study with the Alabama Development Office, the Mobile District of the U.S. Army Corps of Engineers (COE), the United States Geological Survey (USGS), the Soil Conservation Service (SCS), and the City of Montevallo.

On April 10, 1980, the results of the study were reviewed at the final meeting attended by representatives of the study contractor, FIA, and community officials. The study was acceptable to the community.

## 2.0 AREA STUDIED

### 2.1 Scope of Study

This Flood Insurance Study covers the incorporated area of the City of Montevallo. The area of study is shown on the Vicinity Map (Figure 1).

The limits of detailed and approximate studies in Montevallo were determined by FIA with community and study contractor consultation at the meeting in March 1978.

Flooding caused by overflow of four streams were studied in detail: Shoal Creek within the corporate limits, King Creek from its mouth to Shelby County Highway 204, Spring Creek from its mouth to the northern corporate limits, and Dry Creek from its mouth to Shelby County Highway 12.

### 2.2 Community Description

The City of Montevallo is located in the southwestern section of Shelby County, Alabama. It is approximately 30 miles south of Birmingham along Alabama Highway 119. The city has an area of approximately 10 square miles and a population of approximately 4000 (Reference 1).

The economy of Montevallo is dependent on industry. Local industrial or manufactured projects include cement products, lumber, coal, electrical products, and quarried materials. The University of Montevallo is a state liberal arts school with an enrollment of over 3,000 students (Reference 1).

The area is favored with a temperate climate. The average winter temperature is about 48 degrees F and the average summer temperature is about 80 degrees F. The average annual rainfall is approximately 53 inches.

### 2.3 Principal Flood Problems

Montevallo's flooding problems are due primarily to the overflow of Shoal Creek. Shoal Creek flows through Montevallo from the northern corporate limits at Alabama Highway 119 to the southwestern corner of the city. The potential for flood damage in many areas along Shoal Creek is not great due to the lack of development. For example, areas upstream of Overland Road and downstream of the confluence with King Creek are primarily pasture and woodlands. In the reach between the confluence of King Creek and Orr Park, the potential for flood damages is greater due to some development in the flood plain. The flood plain between the dam and the Middle Street viaduct is generally narrow, ranging from 200 to 400 feet. Above Middle Street the Flood Plain widens considerably with widths ranging from about 300 to 1500 feet at Orr Park.

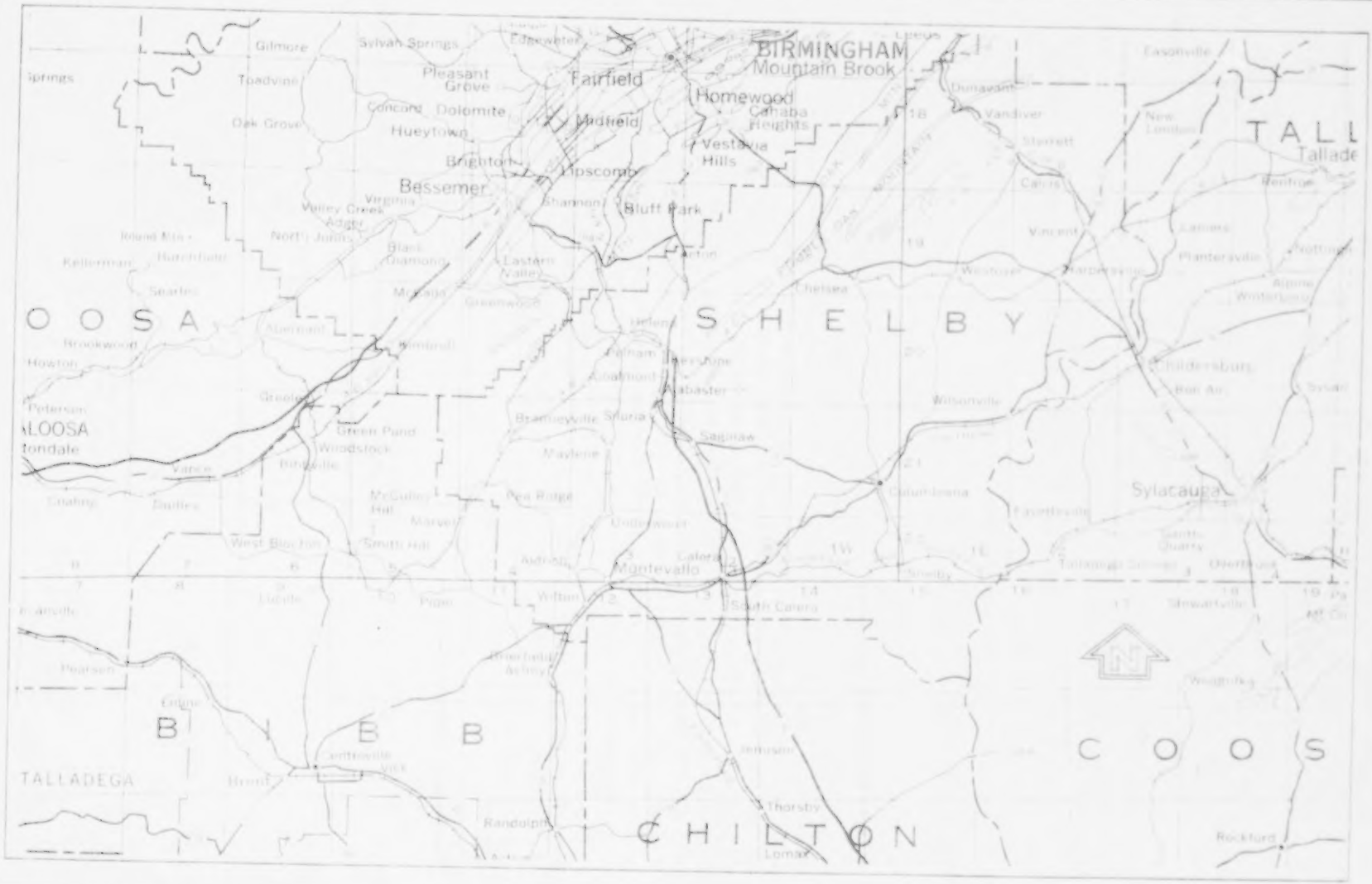



FIGURE 1

FEDERAL EMERGENCY MANAGEMENT AGENCY
Federal Insurance Administration

# CITY OF MONTEVALLO, AL

(SHELBY CO.)

APPROXIMATE SCALE

8 0 8 16 24 MILES

## VICINITY MAP

The largest floods in recent years occurred during March 29, 1977, and March 11, 1979. The 1977 flood was the larger of the two floods. According to local residents (Reference 2), the 1977 flood was the worst in 30 years and about the worst ever.

Mr. Terry Arnold, an area resident, has recorded high water marks from both the 1977 and 1979 floods. Some of these marks were located on the Morgan Street bridge and Middle Street viaduct. These marks serve as indicators of the hydraulic behavior of the stream in this area during flood stage. These high water marks were used as a basis of comparison in determining flood profiles.

### 2.4 Flood Protection Measures

At the present time, there are no flood protection measures affecting the City of Montevallo.

## 3.0 ENGINEERING METHODS

For the flooding sources studied in detail in the community, standard hydrologic and hydraulic study methods were used to determine the flood hazard data required for this study. Flood events of a magnitude which are expected to be equalled or exceeded once on the average during any 10-, 50-, 100-, and 500-year period (recurrence intervals), have been selected as having special significance for flood plain management and for flood insurance premium rates. These events, commonly termed the 10-, 50-, 100-, and 500-year floods, have a 10, 2, 1, and 0.2 percent chance, respectively, of being equalled or exceeded during any year. Although the recurrence interval represents the long term, average period between floods of a specific magnitude, rare floods could occur at short intervals or even within the same year. The risk of experiencing a rare flood increases when periods greater than one year are considered. For example, the risk of having a flood which equals or exceeds the 100-year flood (one percent chance of annual occurrence) in any 50 year period is about 40 percent (four in 10), and for any 90 year period, the risk increases to about 60 percent (six in 10). The analyses reported here reflect flooding potentials based on conditions existing in the community at the time of completion of this study. Maps and flood elevations will be amended periodically to reflect future changes.

### 3.1 Hydrologic Analyses

Hydrologic analyses were carried out to establish peak discharge-frequency relationships for floods of the selected recurrence intervals for each flooding source studied in detail in the community.

Equations have been developed by Olin and Bingham (Reference 3) for estimating peak flows for the 10-, 50-, and 100-year floods on natural streams in Alabama. These flows were used on streams with drainage areas of 1 to 15 square miles. Flood frequency relationships developed by Hains (Reference 4) were used when the drainage area was between 25 and 800 square miles. When the watershed was between 15 and 25 square miles, peak flows were computed by combining the two methods using a weighted average based on drainage area. The 500-year flows were determined by extrapolating the 10-, 50-, and 100-year peak flows using a least squares fit of a log-normal distribution.

The Sauer Method (Reference 5) was used to adjust the natural flows to account for the effects of urbanization. This method related the peak discharge for any return interval to the percentage of impervious area in the watershed and the average rainfall intensity ratio of the 10-, 50-, and 100-year storms to the 2-year storm.

Land use for each watershed was determined from aerial photos (Reference 6), USGS quadrangles (Reference 7), and field inspection. The percent impervious area of any given land use was obtained from the SCS Technical Release No. 55 (Reference 8).

The peak discharge-drainage area relationships for the selected recurrence intervals are presented in Table 1, "Summary of Discharges."

TABLE 1 - SUMMARY OF DISCHARGES

| FLOODING SOURCE AND LOCATION | DRAINAGE AREA (sq. miles) | PEAK DISCHARGES (cfs) 10-YEAR | 50-YEAR | 100-YEAR | 500-YEAR |
|---|---|---|---|---|---|
| SHOAL CREEK | | | | | |
| At downstream Corporate Limits | 58.2 | 5,060 | 8,800 | 10,770 | 14,040 |
| Just above Confluence of King Creek | 45.9 | 4,400 | 7,620 | 9,330 | 12,150 |
| Just downstream of Overland Road | 43.6 | 4,220 | 7,390 | 9,080 | 11,830 |
| Just above confluence of Spring Creek | 14.1 | 2,500 | 4,110 | 4,880 | 6,360 |
| KING CREEK | | | | | |
| At mouth | 11.5 | 2,420 | 3,820 | 4,450 | 5,790 |
| SPRING CREEK | | | | | |
| At mouth | 29.2 | 3,210 | 5,620 | 6,910 | 9,000 |
| Just above confluence of Dry Creek | 15.9 | 2,610 | 4,360 | 5,190 | 6,790 |
| DRY CREEK | | | | | |
| At mouth | 13.4 | 2,810 | 4,400 | 5,130 | 6,650 |

## 3.2 Hydraulic Analyses

Analyses of the hydraulic characteristics of the flooding sources studied in detail in the City of Montevallo were carried out to provide estimates of the elevation of floods of the selected recurrence intervals along each of the flood sources.

Cross sections for the backwater analyses of the streams were obtained from aerial photographs taken in March 1978 at a negative scale of 1.0 inch equals 800 feet. The below-water sections were obtained by field measurement. All bridges were field checked to obtain elevation data and structural geometry.

Cross sections were located at close intervals above and below bridges and culverts in order to compute the backwater effects of these structures. Locations of selected cross sections used in the hydraulic analyses are shown on the Flood Profiles (Exhibit 1) and on the Flood Boundary and Floodway Map (Exhibit 3).

Channel roughness factors (Manning's "n") used in the hydraulic computations, were chosen by engineering judgement and based on field observations of the streams and flood plain areas. Roughness values used for the four streams averaged 0.040 for the channel and ranged from 0.035 to 0.120 for the overbank areas.

Flood profiles were drawn showing computed water-surface elevations to an accuracy of 0.5 foot for floods of the selected recurrence intervals. Water-surface elevations for floods of the selected recurrence intervals were computed through used of the COE HEC-2 step-backwater computer program (Reference 9). The starting water-surface elevations for Montevallo study streams were calculated using the slope-area method.

All elevations area referenced from the National Geodetic Vertical Datum of 1929 (NGVD), formerly referred to as Mean Sea Level Datum of 1929; elevation reference marks used in this study are shown and described on the maps.

Flood elevations in the City of Montevallo may be raised by debris blockage of the streams in the study area. The hydraulic analyses for this study, however, are based only on the effect of unobstructed flow. The flood elevations as shown on the profiles are thus considered valid only if hydraulic structures in general remain unobstructed and do not fail.

## 4.0 FLOOD PLAIN MANAGEMENT APPLICATIONS

The National Flood Insurance Program encourages state and local governments to adopt sound flood plain management programs. Therefore, each Flood Insurance Study includes a flood boundary map designed to assist communities in developing sound flood plain management measures.

### 4.1 Flood Boundaries

In order to provide a national standard without regional discrimination, the 100-year flood has been adopted by the FIA as the base flood for purposes of flood plain management measures. The 500-year flood is employed to indicate additional areas of flood risk in the community. For each stream studied in detail, the boundaries of the 100- and the 500-year floods have been delineated using the flood elevations determined at each cross section; between cross sections, the boundaries were interpolated using topographic maps at a scale of 1:6000 with a contour interval of 4 feet (Reference 10). In cases where the 100- and the 500-year flood boundaries are close together, only the 100-year boundary has been shown.

The boundaries of the 100- and 500-year floods are shown on the Flood Boundary and Floodway Map (Exhibit 3). Small areas within the flood boundaries may lie above the flood elevations, and therefore, may not be subject to flooding. Owing to limitations of the map scale and/or lack of detailed topographic data, such areas are not shown.

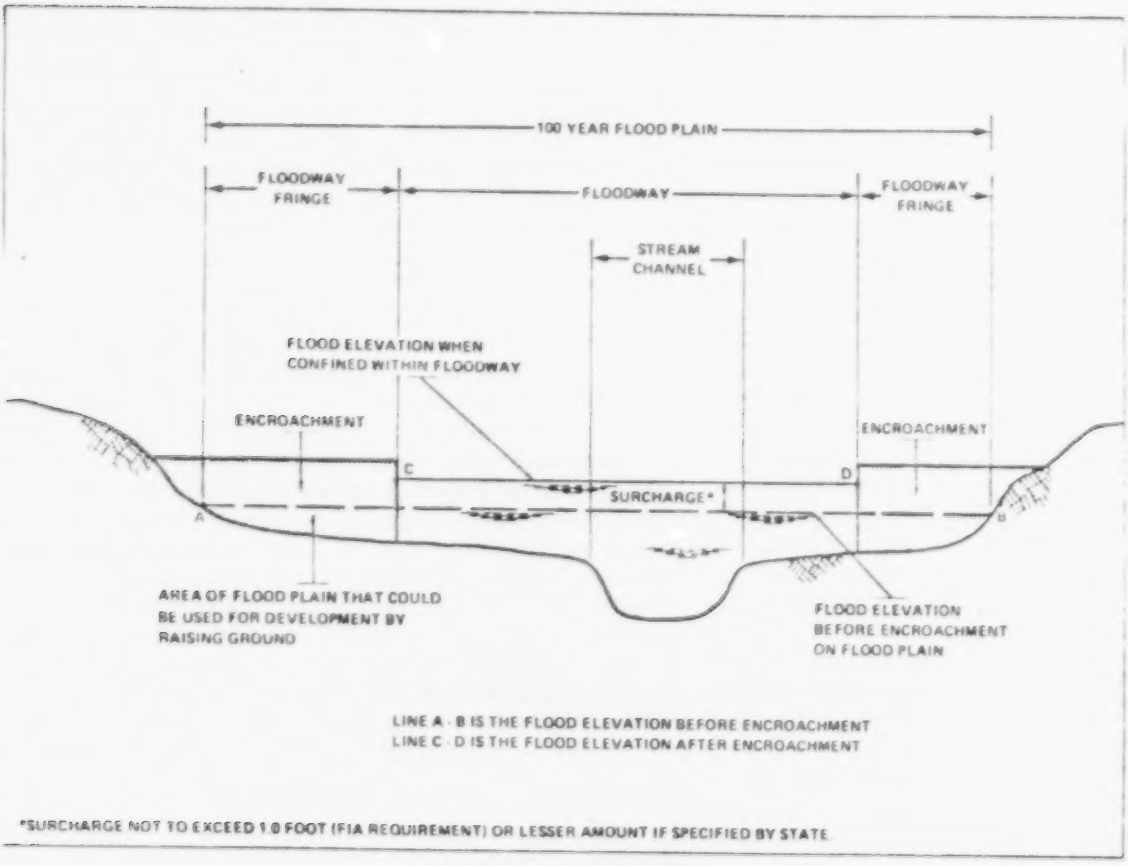
### 4.2 Floodways

Encroachment on flood plains, such as artificial fill, reduces the flood-carrying capacity, increases the flood heights of streams, and increases flood hazards in areas beyond the encroachment itself. One aspect of flood plain management involves balancing the economic gain from flood plain development against the resulting increase in flood hazard. For purposes of the National Flood Insurance Program, the concept of a floodway is used as a tool to assist local communities in this aspect of flood plain management. Under this concept, the area of the 100-year flood is divided into a floodway and a floodway fringe. The floodway is the channel of a stream plus any adjacent flood plain areas that must be kept free of encroachment in order that the 100-year flood may be carried without substantial increases in flood heights. Minimum standards of the FIA limit such increases in flood heights to 1.0 foot, provided that hazardous velocities are not produced. The floodways in this report are presented to local agencies as minimum standards that can be adopted or that can be used as a basis for additional studies.

The floodways presented in this study were computed on the basis of equal conveyance reduction from each side of the flood plain. The results of these computations are tabulated at selected cross sections for each stream segment for which a floodway was computed (Table 2).

As shown on the Flood Boundary and Floodway Map (Exhibit 3), the floodway widths were determined at cross sections; between cross sections, the boundaries were interpolated. In cases where the floodway and the 100-year boundaries are close together, only the floodway boundary has been shown.

The area between the floodway and the boundary of the 100-year flood is termed the floodway fringe. The floodway fringe thus encompasses the portion of the flood plain that could be completely obstructed without increasing the water-surface elevation of the 100-year flood more than 1.0 foot at any point. Typical relationships between the floodway and the floodway fringe and their significance to flood plain development are shown in Figure 2.


100 YEAR FLOOD PLAIN
FLOODWAY FRINGE
FLOODWAY
FLOODWAY FRINGE
STREAM CHANNEL
FLOOD ELEVATION WHEN CONFINED WITHIN FLOODWAY
ENCROACHMENT
ENCROACHMENT
C
D
SURCHARGE*
A
B
AREA OF FLOOD PLAIN THAT COULD BE USED FOR DEVELOPMENT BY RAISING GROUND
FLOOD ELEVATION BEFORE ENCROACHMENT ON FLOOD PLAIN
LINE A - B IS THE FLOOD ELEVATION BEFORE ENCROACHMENT
LINE C - D IS THE FLOOD ELEVATION AFTER ENCROACHMENT
*SURCHARGE NOT TO EXCEED 1.0 FOOT (FIA REQUIREMENT) OR LESSER AMOUNT IF SPECIFIED BY STATE

FLOODWAY SCHEMATIC

Figure 2

| FLOODING SOURCE | | FLOODWAY | | | BASE FLOOD WATER SURFACE ELEVATION | | | |
|---|---|---|---|---|---|---|---|---|
| CROSS SECTION | DISTANCE[1] | WIDTH (FT.) | SECTION AREA (SQ. FT.) | MEAN VELOCITY (F.P.S.) | REGULATORY (NGVD) | WITHOUT FLOODWAY (NGVD) | WITH FLOODWAY (NGVD) | INCREASE (FEET) |
| Shoal Creek | | | | | | | | |
| A | 0 | 810[2] | 5,350 | 2.0 | 382.4 | 382.4 | 383.4 | 1.0 |
| B | 2,500 | 800[2] | 5,200 | 2.1 | 382.8 | 382.8 | 383.8 | 1.0 |
| C | 4,000 | 690[2] | 4,160 | 2.6 | 383.2 | 383.2 | 384.1 | 0.9 |
| D | 4,960 | 490 | 2,620 | 4.1 | 383.6 | 383.6 | 384.5 | 0.9 |
| E | 6,880 | 230 | 1,670 | 5.6 | 385.7 | 385.7 | 486.5 | 0.8 |
| F | 7,370 | 80 | 980 | 9.5 | 386.4 | 386.4 | 387.3 | 0.9 |
| G | 7,550 | 100 | 1,120 | 8.3 | 387.2 | 387.2 | 388.1 | 0.9 |
| H | 8,200 | 120 | 1,000 | 9.4 | 388.9 | 388.9 | 389.8 | 0.9 |
| I | 8,490 | 220 | 840 | 11.1 | 392.1 | 392.1 | 392.1 | 0.0 |
| J | 8,970 | 210 | 1,340 | 7.0 | 394.0 | 394.0 | 394.0 | 0.0 |
| K | 9,140 | 210 | 1,430 | 6.5 | 394.8 | 394.8 | 394.9 | 0.1 |
| L | 9,660 | 90 | 1,040 | 9.0 | 396.5 | 396.5 | 496.7 | 0.2 |
| M | 9,890 | 90 | 1,160 | 8.1 | 397.6 | 397.6 | 398.2 | 0.6 |
| N | 10,070 | 240 | 2,480 | 3.8 | 398.7 | 398.7 | 399.5 | 0.8 |
| O | 10,390 | 190 | 2,110 | 4.4 | 399.4 | 399.4 | 400.2 | 0.8 |
| P | 11,490 | 460 | 4,390 | 2.1 | 400.8 | 400.8 | 401.7 | 0.9 |
| Q | 13,160 | 160 | 1,280 | 7.3 | 402.3 | 402.3 | 403.2 | 0.9 |
| R | 14,510 | 630 | 3,740 | 2.5 | 405.1 | 405.1 | 406.0 | 0.9 |
| S | 16,100 | 190 | 1,430 | 6.4 | 407.0 | 407.0 | 407.9 | 0.9 |
| T | 16,880 | 230 | 1,820 | 5.0 | 408.9 | 408.9 | 409.9 | 1.0 |
| U | 17,040 | 310 | 2,700 | 3,4 | 411.0 | 411.0 | 412.0 | 1.0 |
| V | 17,810 | 210 | 2,190 | 4.1 | 411.6 | 411.6 | 412.5 | 0.9 |

[1]Feet above downstream limit of detailed study.
[2]This width extends beyond the corporate limits.

TABLE 2

FEDERAL EMERGENCY MANAGEMENT AGENCY
Federal Insurance Administration

CITY OF MONTEVALLO, AL
(SHELBY CO.)

FLOODWAY DATA

SHOAL CREEK

| FLOODING SOURCE | | FLOODWAY | | | BASE FLOOD WATER SURFACE ELEVATION | | | |
|---|---|---|---|---|---|---|---|---|
| CROSS SECTION | DISTANCE[1] | WIDTH (FT.) | SECTION AREA (SQ. FT.) | MEAN VELOCITY (F.P.S.) | REGULATORY (NGVD) | WITHOUT FLOODWAY (NGVD) | WITH FLOODWAY (NGVD) | INCREASE (FEET) |
| Shoal Creek (cont.d) | | | | | | | | |
| W | 18,660 | 360 | 2,400 | 2.0 | 412.5 | 412.5 | 413.5 | 1.0 |
| X | 19,780 | 80 | 600 | 8.1 | 412.6 | 412.6 | 413.5 | 0.9 |
| Y | 21,980 | 120 | 880 | 5.6 | 419.4 | 419.4 | 420.3 | 0.9 |
| Z | 23,740 | 290[3] | 1,630 | 2.9 | 421.4 | 421.4 | 422.3 | 0.9 |
| AA | 25,590 | 260[3] | 1,400 | 3.4 | 422.8 | 422.8 | 423.5 | 0.7 |
| King Creek | | | | | | | | |
| A | 350 | 530 | 1,380 | 3.2 | 384.8 | 382.5[2] | 383.5 | 1.0 |
| B | 1,130 | 390 | 1,090 | 4.1 | 384.8 | 382.4[2] | 384.2 | 0.8 |
| C | 1,610 | 210 | 960 | 4.6 | 385.4 | 385.4 | 386.3 | 0.9 |
| D | 2,610 | 60 | 530 | 8.2 | 387.1 | 387.1 | 387.9 | 0.8 |
| Spring Creek | | | | | | | | |
| A | 870 | 240 | 1,270 | 5.5 | 412.3 | 411.6[2] | 412.3 | 0.7 |
| B | 2,400 | 290 | 970 | 5.4 | 415.7 | 415.7 | 416.2 | 0.5 |
| C | 3,250 | 160 | 970 | 5.4 | 419.2 | 419.2 | 419.9 | 0.7 |
| D | 3,410 | 250 | 1,650 | 3.1 | 421.0 | 421.0 | 421.9 | 0.9 |
| E | 3,890 | 120 | 890 | 5.8 | 421.3 | 421.3 | 422.1 | 0.8 |
| F | 4,480 | 230 | 1,550 | 3.3 | 422.7 | 422.7 | 423.6 | 0.9 |
| G | 5,210 | 150 | 800 | 6.5 | 423.8 | 423.8 | 424.4 | 0.6 |
| H | 6,510 | 260 | 1,780 | 2.9 | 428.4 | 428.4 | 429.3 | 0.9 |

[1]Feet above downstream limit of detailed study for Shoal Creek; Feet above mouth for King and Spring Creeks.
[2]Water-surface elevation determined without considering backwater effects.
[3]This width extends beyond corporate limits.

TABLE 2

FEDERAL EMERGENCY MANAGEMENT AGENCY
Federal Insurance Administration

**CITY OF MONTEVALLO, AL**
(SHELBY CO.)

**FLOODWAY DATA**

**SHOAL CREEK-KING CREEK-SPRING CREEK**

| FLOODING SOURCE | | FLOODWAY | | | BASE FLOOD WATER SURFACE ELEVATION | | | |
|---|---|---|---|---|---|---|---|---|
| CROSS SECTION | DISTANCE[1] | WIDTH (FT.) | SECTION AREA (SQ. FT.) | MEAN VELOCITY (F.P.S.) | REGULATORY (NGVD) | WITHOUT FLOODWAY (NGVD) | WITH FLOODWAY (NGVD) | INCREASE (FEET) |
| Dry Creek | | | | | | | | |
| A | 200 | 140 | 750 | 6.8 | 416.1 | 416.1 | 417.1 | 1.0 |
| B | 850 | 110 | 610 | 8.4 | 421.4 | 421.4 | 422.1 | 0.7 |
| C | 1,980 | 160 | 730 | 7.0 | 428.3 | 428.3 | 429.0 | 0.7 |

[1]Feet above mouth

TABLE 2

FEDERAL EMERGENCY MANAGEMENT AGENCY
Federal Insurance Administration

CITY OF MONTEVALLO, AL
(SHELBY CO.)

FLOODWAY DATA

DRY CREEK

## 5.0 INSURANCE APPLICATION

In order to establish actuarial insurance rates, the FIA has developed a process to transform the data from the engineering study into flood insurance criteria. This process includes the determination of reaches, Flood Hazard Factors (FHFs), and flood insurance zone designations for each significant flooding source affecting the City of Montevallo.

### 5.1 Reach Determinations

Reaches are defined as lengths of watercourses having relatively the same flood hazard, based on the average weighted difference in water-surface elevations between the 10- and 100-year floods. This difference does not have a variation greater than that indicated in the following table for more than 20 percent of the reach.

| Average Difference Between 10- and 100-Year Floods | Variation |
|---|---|
| Less than 2 feet | 0.5 foot |
| 2 to 7 feet | 1.0 foot |

Five reaches meeting the above criteria were required for the flooding sources of the City of Montevallo. These include one reach for Shoal Creek, two reaches for Spring Creek, one reach for King Creek, and one reach for Dry Creek. The locations of the reaches are shown on the Flood Profiles (Exhibit 1) and summarized in the Flood Insurance Zone Data Table (Table 3).

### 5.2 Flood Hazard Factors (FHFs)

The Flood Hazard Factor is used to correlate flood information with insurance rate tables. Correlations between property damages from floods and their assigned FHFs are used to set actuarial insurance premium rate tables based on FHFs from 005 to 200.

The FHF for a reach is the average weighted difference between the 10- and 100-year flood water-surface elevations expressed to the nearest one-half foot, and shown as a three-digit code. For example, if the difference between the water-surface elevations of the 10- and 100-year floods is 0.7 foot, the FHF is 005; if the difference is 1.4 feet, the FHF is 015; if the difference is 5.0 feet, the FHF is 050. When the difference between the 10- and 100-year flood water-surface elevations is greater than 10.0 feet, the accuracy for the FHF is to the nearest foot.

5.3 Flood Insurance Zones

After the determination of reaches and their respective FHFs, the entire incorporated area of the City of Montevallo was divided into zones, each having a specific flood potential or hazard. Each zone was assigned one of the following flood insurance zone designations.

| | |
|---|---|
| Zones A2, A3, A4 A5: | Special Flood Hazard Areas inundated by the 100-year flood, determined by detailed methods; base flood elevations shown, and zones subdivided according to FHFs. |
| Zone B: | Areas between the Special Flood Hazard Area and the limits of the 500-year flood, including areas of the 500-year flood plain that are protected from the 100-year flood by dike, levee, or other water control structure; areas subject to certain types of 100-year shallow flooding where depths are less than 1.0 foot; or areas subject to 100-year flooding from sources with drainage areas less than 1 square mile. Zone B is not subdivided. |
| Zone C: | Areas of minimal flooding. |

Table 3, "Flood Insurance Zone Data," summarizes the flood elevation differences, FHFs, flood insurance zones, and base flood elevation for each flooding source studied in detail in the community.

5.4 Flood Insurance Rate Map Description

The Flood Insurance Rate Map for the City of Montevallo is, for insurance purposes, the principal result of the Flood Insurance Study. This map (published separately) contains the official delineation of flood insurance zones and base flood elevation lines. Base flood elevation lines show the locations of the expected whole-foot water-surface elevations of the base (100-year) flood. This map is developed in accordance with the latest flood insurance map preparation guidelines published by the FIA.

## 6.0 OTHER STUDIES

This study is authoritative for the purposes of the Flood Insurance program; data presented herein either supersede or are compatible with all previous deteminations. Flood Insurance Studies for areas near Montevallo in Shelby County exist and are applicable.

| FLOODING SOURCE | PANEL[1] | ELEVATION DIFFERENCE[2] BETWEEN 1.0% (100-YEAR) FLOOD AND | | | FHF | ZONE | BASE FLOOD ELEVATION[3] (NGVD) |
|---|---|---|---|---|---|---|---|
| | | 10% (10 YR.) | 2% (50 YR.) | 0.2% (500 YR.) | | | |
| Shoal Creek | | | | | | | |
| Reach 1 | 0001,0002 | -2.4 | -0.8 | +1.0 | 025 | A5 | Varies |
| King Creek | | | | | | | |
| Reach 1 | 0001,0002 | -0.8 | -0.2 | +0.4 | 010 | A2 | Varies |
| Spring Creek | | | | | | | |
| Reach 1 | 0001 | -2.1 | -0.5 | +0.7 | 020 | A4 | Varies |
| Reach 2 | 0001 | -1.6 | -0.5 | +0.8 | 015 | A3 | Varies |
| Dry Creek | | | | | | | |
| Reach 1 | 0001 | -1.6 | -0.4 | +0.8 | 015 | A3 | Varies |

[1]FLOOD INSURANCE RATE MAP PANEL
[2]WEIGHTED AVERAGE
[3]ROUNDED TO NEAREST FOOT-SEE MAP

TABLE 3

FEDERAL EMERGENCY MANAGEMENT AGENCY
Federal Insurance Administration

CITY OF MONTEVALLO, AL
(SHELBY CO.)

FLOOD INSURANCE ZONE DATA

SHOAL CREEK- KING CREEK-SPRING CREEK-DRY CREEK

## 7.0 LOCATION OF DATA

Survey, hydrologic, hydraulic, and other pertinent data used in this study can be obtained by contacting the office of the Federal Emergency Management Agency, Insurance and Mitigation Division, 1375 Peachtree Street, N.E., Suite 778, Atlanta, Georgia 30309.

## 8.0 BIBLIOGRAPHY AND REFERENCE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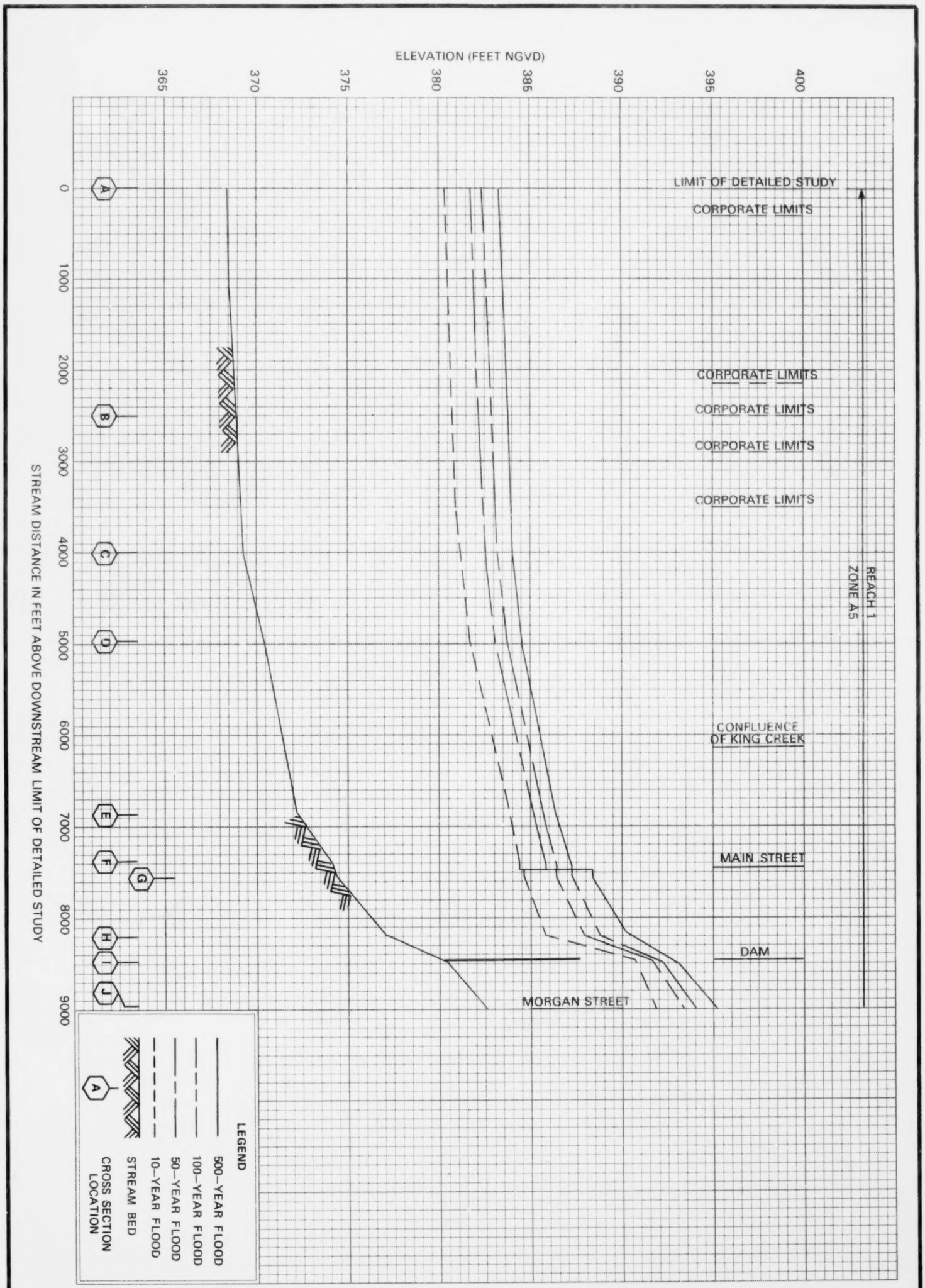


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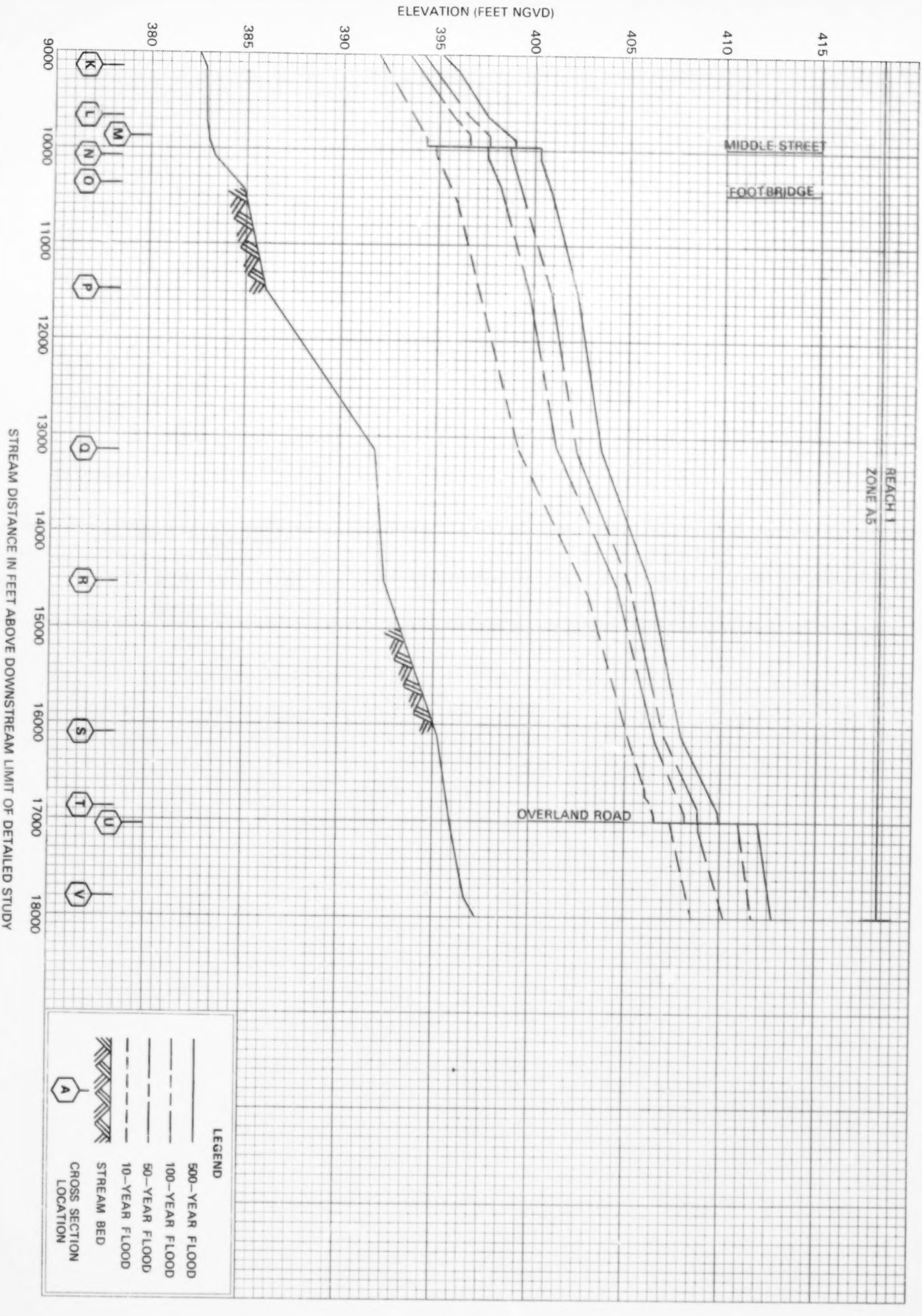
|---|---|---|
| 01P | FEDERAL EMERGENCY MANAGEMENT AGENCY<br>Federal Insurance Administration<br>CITY OF MONTEVALLO, AL<br>(SHELBY CO.) | FLOOD PROFILES<br>SHOAL CREEK |



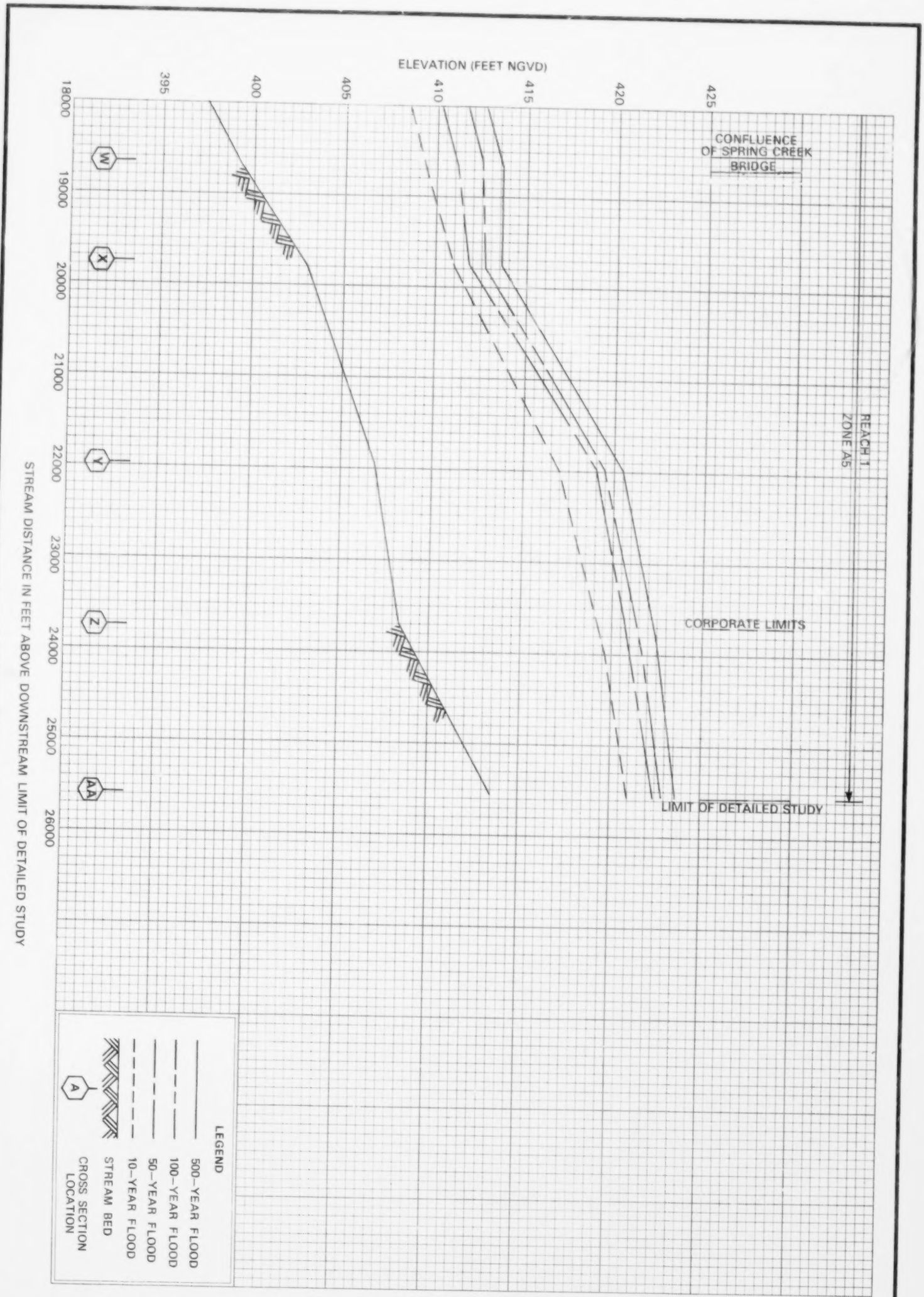

02P

FEDERAL EMERGENCY MANAGEMENT AGENCY
Federal Insurance Administration

CITY OF MONTEVALLO, AL
(SHELBY CO.)

FLOOD PROFILES

SHOAL CREEK

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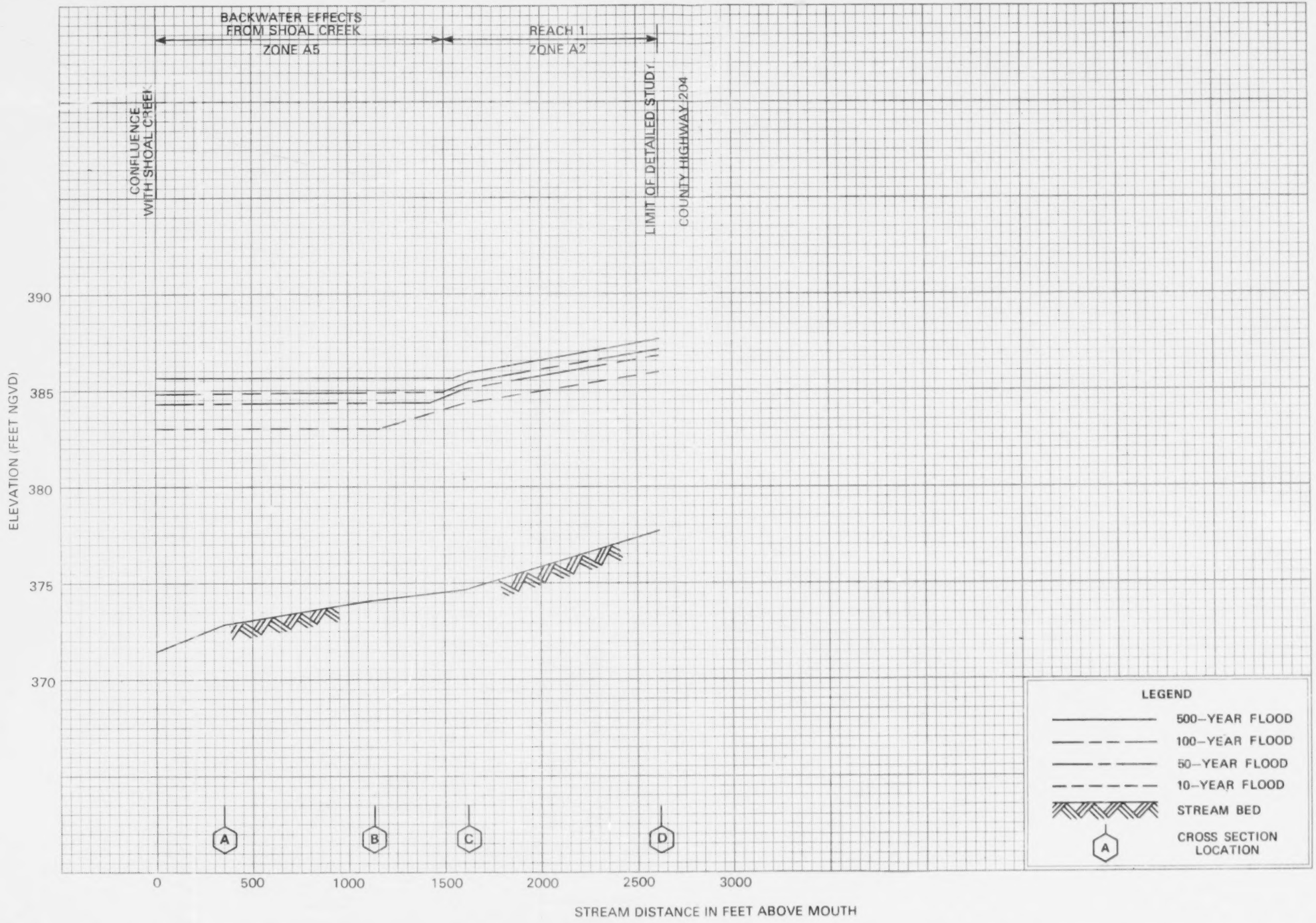



FLOOD PROFILES

KING CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY
Federal Insurance Administration

CITY OF MONTEVALLO, AL
(SHELBY CO.)

04P

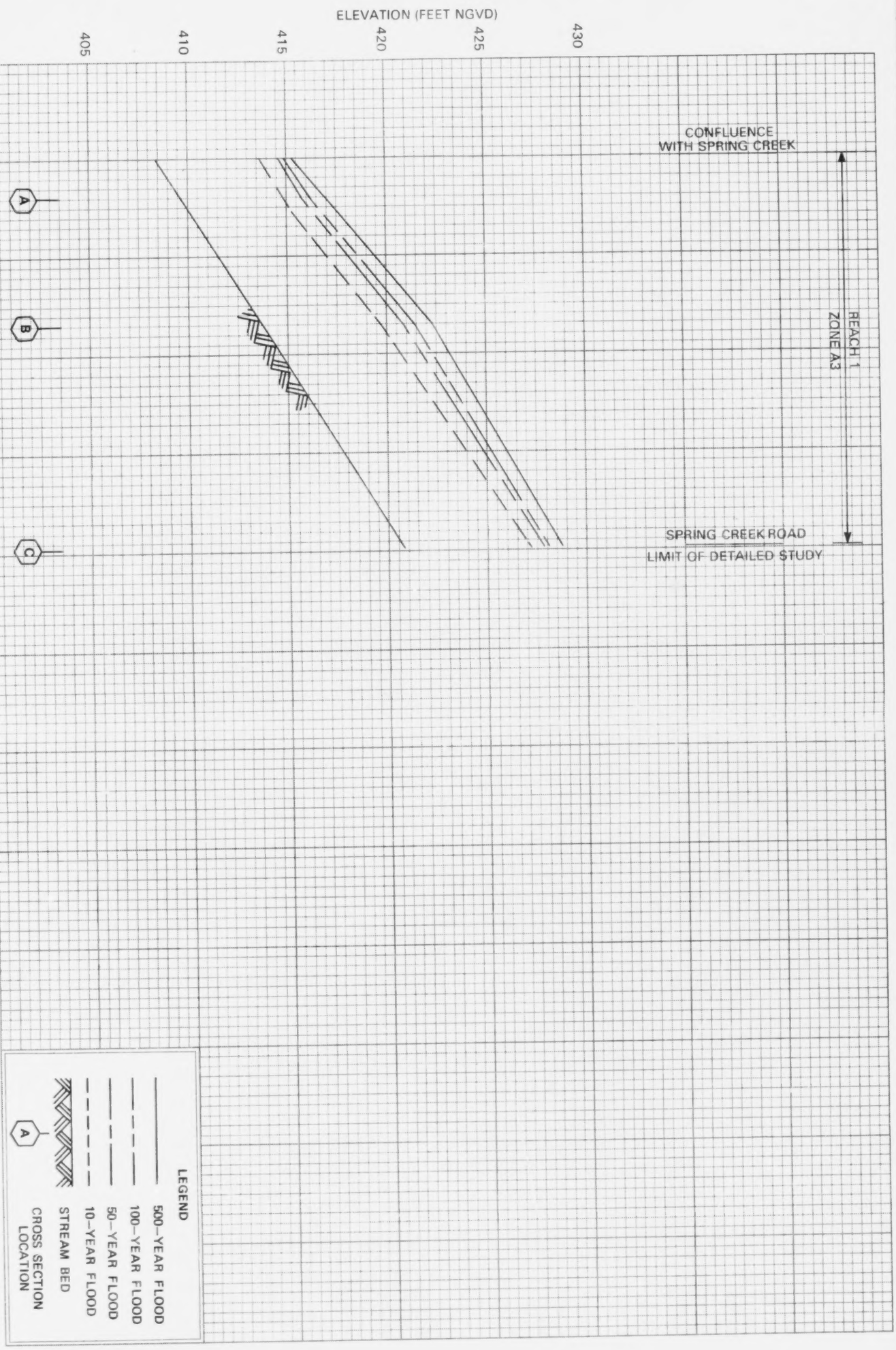
FLOOD PROFILES

SPRING CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY
Federal Insurance Administration

CITY OF MONTEVALLO, AL
(SHELBY CO.)

05P




| | | |
|---|---|---|
| 06P | FEDERAL EMERGENCY MANAGEMENT AGENCY<br>Federal Insurance Administration<br>CITY OF MONTEVALLO, AL<br>(SHELBY CO.) | FLOOD PROFILES<br>DRY CREEK |